

CLAIMS

1. A product for an electrochemical cell including a bipolar plate including a sheet metal product having a conductive and corrosion-resistant protective coating including a metal oxide on at least one side, with the metal oxide having a treatment which ensures conductivity.

2. A product in accordance with claim 1 wherein the treatment has been carried out in order to produce a crystal structure of the metal oxide coating which ensures conductivity.

3. A product in accordance with claim 1 wherein the treatment takes the forms of a galvanic coating consisting of one of the elements aluminum, chromium, silver, antimony or molybdenum applied directly below the metal oxide coating.

4. A product in accordance with claim 1 wherein the treatment is executed as a doping.

5. A product in accordance with claim 4 wherein the protective coating consists of at least one layer.

6. A product in accordance with claim 4 wherein the protective coating comprises an oxide of one of the following elements or alloys of these elements: tin, zinc, indium.

7. A product in accordance with claim 4 wherein the protective coating comprises a first layer of a metal oxide, a second layer of a dopant which ensures conductivity, and a third layer of a metal oxide.

8. A product in accordance with claim 1 wherein the protective coating comprises an alternating layer sequence of metal oxide and dopants which ensure conductivity

9. A product in accordance with claim 1 wherein the protective coating comprises at least two layers.

10. A product in accordance with claim 4 wherein the doping which ensures the conductivity comprises at least one element of the group aluminum, chromium, silver, boron, fluorine, antimony, chlorine, bromine, phosphorus, molybdenum and/or carbon.

11. A product in accordance with claim 1 wherein the protective coating comprises a protective coating deposited in a vacuum chamber.

12. A product in accordance with claim 1 wherein the protective coating has a thickness in the range between 1 monolayer and 1 μ , preferably between approximately 1 nm and approximately 500 nm.

13. A product in accordance with claim 1 wherein the sheet metal comprises aluminum, chrome-plate aluminum, copper, stainless steel, chrome-plated stainless steel, titanium, titanium alloys and iron-containing compounds both with and without metallic coating, with the metallic coating including at least one of the elements tin, zinc, nickel, chromium or alloys of these materials.

14. A product in accordance with claim 1 wherein the sheet metal product has a thickness in the range from about 0.001 mm to about 5 mm.